

wherein said converging means converges said light flux as a smaller spot diameter D by
employing a larger one of said numerical apertures, with respect to one of said optical discs
having a thinner one of said substrates, and
wherein thicknesses of said transparent substrates of said N types of optical discs are
about 1.2mm or less than 1.2mm.

sub
C1
36. An optical recording/reproducing apparatus for recording, reproducing or erasing an
information signal onto/from any one of N types (where $N \geq 2$) of optical discs having first
layers of different thicknesses, each type of said optical discs having at least said first layer being
transparent and a second layer for storing information, by converging a light flux onto said
second layer through said first layer, said apparatus comprising:

BI
Cm
it
a converging means having different numerical apertures for converging the light flux on
said second layer of corresponding one of said N types of optical discs,

wherein said converging means converges said light flux as a smaller spot diameter D by
employing a larger one of said numerical apertures, with respect to one of said optical discs
having a thinner one of said first layers, and

wherein thicknesses of said first layers of said N types of optical discs are about 1.2mm
or less than 1.2mm.

37. An optical recording/reproducing system comprising:

(a) an optical recording/reproducing apparatus for recording, reproducing or erasing an
information signal onto/from any one of N types (where $N \geq 2$) of optical discs having
transparent substrates of different thicknesses, each type of said optical discs having at least said

transparent substrate and an information layer, by converging a light flux onto said information layer through said transparent substrate, said apparatus comprising:

a photo detecting means for detecting reflective light from said optical discs, and

a converging means having different numerical apertures for converging the light flux on said information layer of corresponding one of said N types of optical discs,

wherein said converging means converges said light flux as a smaller spot diameter D by employing a larger one of said numerical apertures, with respect to one of said optical discs having a thinner one of said substrates, and

wherein thicknesses of said transparent substrates of said N types of optical discs are about 1.2mm or less than 1.2mm.

(b) a system controlling means coupled to said converging means for moving said converging means relative to the optical discs loaded in said apparatus to traverse a recording track thereof; and

(c) a signal processing means coupled to said photo detecting means for encoding or decoding said information signal.

38. An optical recording/reproducing system comprising:

(a) an optical recording/reproducing apparatus for recording, reproducing or erasing an information signal onto/from any one of N types (where $N \geq 2$) of optical discs having first layers of different thicknesses, each type of said optical discs having at least said first layer being transparent and a second layer for storing information, by converging a light flux onto said second layer through said first layer, said apparatus comprising:

a photo detecting means for detecting reflective light from said optical discs,

a converging means having different numerical apertures for converging the light flux on said second layer of corresponding one of said N types of optical discs,

wherein said converging means converges said light flux as a smaller spot diameter D by employing a larger one of said numerical apertures, with respect to one of said optical discs having a thinner one of said first layers, and

wherein thicknesses of said first layers of said N types of optical discs are about 1.2mm or less than 1.2mm,

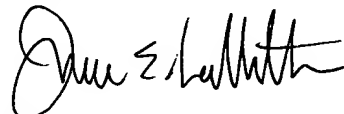
(b) a systems controlling means coupled to said converging means for moving said converging means relative to the optical discs loaded in said apparatus to traverse a recording track thereof; and

(c) a signal processing means coupled to said photo detecting means for encoding or decoding said information signal.--

REMARKS

Early and favorable consideration of this application is respectfully requested.

Respectfully submitted,



James E. Ledbetter
Registration No. 28,732

Date: December 13, 1999

JEL/kkl
ATTORNEY DOCKET NO. JEL 28567RE-A
STEVENS, DAVIS, MILLER & MOSHER, L.L.P.
1615 L Street, NW, Suite 850
P.O. Box 34387
Washington, DC 20043-4387
Telephone: (202) 408-5100
Facsimile: (202) 408-5200